

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (Currently amended) A wireless audio transmission and reception system
2 comprising:

3 a pulse width amplifier to receive an ~~analog~~audio signal and modulate
4 a pulse width of a digital timing signal with said ~~analog~~audio
5 signal, such that the pulse width is proportional to an amplitude
6 of said ~~analog~~audio signal to provide a pulse width modulated
7 signal;

8 an up-converter in communication with the pulse width amplifier to
9 receive the pulse width modulated signal and convert said pulse
10 width modulated signal to a modulated carrier signal;

11 a transmitter in communication with the modulated carrier signal to
12 transfer the modulated carrier signal wirelessly;

13 a receiver to receive the modulated carrier signal;

14 a down-converter in communication with the receiver to receive the
15 modulated carrier signal and extract the pulse width modulated
16 signal from the modulated carrier signal; and

17 an integrator in communication with the down-converter to receive the
18 extracted pulse width modulated signal to remove a timing
19 signal from said extracted pulse width modulated signal and to
20 restore the analog audio signal.

1 2. (Currently amended) The system of claim 1 further comprising power
2 amplifier in communication with the integrator to receive the analog audio
3 signal and amplify said analog audio signal and transfer said amplified
4 analog audio signal to a transducer.

1 3. (Currently amended) The system of claim 1 wherein the pulse width
2 amplifier comprises

3 a comparator having a first input to receive the analog audio signal and
4 a second input to receive the timing signal, said timing signal
5 having a triangular form such that, as said comparator
6 compares the analog audio signal and the timing signal, the
7 pulse width modulated signal is provided to an output of said
8 comparator.

1 4. (Original) The system of claim 1 wherein the up-converter comprises a
2 modulation apparatus to combine a carrier frequency with the pulse width
3 modulated signal to form the modulated carrier signal.

1 5. (Original) The system of claim 4 wherein the modulation apparatus is
2 selected from a group of modulation apparatus consisting of frequency
3 shift keying modulation apparatus, amplitude shift keying modulation
4 apparatus, phase shift keying modulation apparatus, quadrature phase
5 shift keying modulation apparatus, time domain multiple access
6 modulation apparatus, and code domain multiple access modulation
7 apparatus.

1 6. (Original) The system of claim 1 wherein the down-converter comprises a
2 demodulation apparatus to extract the pulse width modulated signal from
3 the modulated carrier signal.

1 7. (Original) The system of claim 6 wherein the demodulation apparatus is
2 selected from a group of demodulation apparatus consisting of frequency
3 shift demodulation apparatus, amplitude shift keying demodulation
4 apparatus, phase shift keying demodulation apparatus, quadrature phase
5 shift keying demodulation apparatus, time domain multiple access
6 demodulation apparatus, and code domain multiple access demodulation
7 apparatus.

1 8. (Currently amended) The system of claim 1 wherein the integrator is a low
2 pass filter having a cut off frequency suitable to pass the analog-audio
3 signal and remove the timing signal.

1 9. (Original) The system of claim 1 wherein the carrier frequency is at least
2 900 MHz.

1 10. (Currently amended) A wireless audio transmitter system comprising"
2 a pulse width amplifier to receive an analog-audio signal and modulate
3 a pulse width of a digital timing signal with said analog-audio
4 signal, such that the pulse width is proportional to an amplitude
5 of said analog-audio signal to provide a pulse width modulated
6 signal;

7 an up-converter in communication with the pulse width amplifier to
8 receive the pulse width modulated signal and convert said pulse
9 width modulated signal to a modulated carrier signal; and

10 a transmitter in communication with the modulated carrier signal to
11 transfer the modulated carrier signal wirelessly;

1 11. (Currently amended) The transmitter system of claim 10 wherein the pulse
2 width amplifier comprises

3 a comparator having a first input to receive the analog-audio signal and
4 a second input to receive the timing signal, said timing signal

5 having a triangular form such that, as said comparator
6 compares the ~~analog~~audio signal and the timing signal, the
7 pulse width modulated signal is provided to an output of said
8 comparator.

1 12. (Original) The transmitter system of claim 10 wherein the up-converter
2 comprises a modulation apparatus to combine a carrier frequency with the
3 pulse width modulated signal to form the modulated carrier signal.

1 13. (Original) The transmitter system of claim 12 wherein the modulation
2 apparatus is selected from a group of modulation apparatus consisting of
3 frequency shift keying modulation apparatus, amplitude shift keying
4 modulation apparatus, phase shift keying modulation apparatus,
5 quadrature phase shift keying modulation apparatus, time domain multiple
6 access modulation apparatus, and code domain multiple access
7 modulation apparatus.

8 14. The transmitter system of claim 10 wherein the carrier frequency is at
9 least 900 MHz.

1 15. (Currently amended) A wireless audio receiver system comprising"
2 a receiver to receive the ~~modulated carrier signal~~ a modulated carrier
3 signal;

4 a down-converter in communication with the receiver to receive the
5 modulated carrier signal and extract ~~the pulse width modulated~~
6 ~~signal~~ a pulse width modulated signal from the modulated
7 carrier signal; and

8 an integrator in communication with the down-converter to receive the
9 extracted pulse width modulated signal to remove a timing
10 signal from said extracted pulse width modulated signal and to
11 ~~restore the analog signal~~ an audio signal.

1 16. (Original) The receiver system of claim 15 wherein the down-converter
2 comprises a demodulation apparatus to extract the pulse width modulated
3 signal from the modulated carrier signal.

1 17. (Original) The receiver system of claim 16 wherein the demodulation
2 apparatus is selected from a group of demodulation apparatus consisting
3 of frequency shift demodulation apparatus, amplitude shift keying
4 demodulation apparatus, phase shift keying demodulation apparatus,
5 quadrature phase shift keying demodulation apparatus, time domain
6 multiple access demodulation apparatus, and code domain multiple
7 access demodulation apparatus.

1 18. (Currently amended) The receiver system of claim 15 wherein the
2 integrator is a low pass filter having a cut off frequency suitable to pass
3 the ~~analog~~ audio signal and remove the timing signal.

1 19. (Currently amended) The receiver system of claim 15 wherein the carrier
2 frequency is at least 900 MHz.

1 20. (Currently amended) A method for wireless transmission of an analog
2 audio signal comprising the steps of:

3 acquiring the analog audio signal;

4 comparing said analog audio signal with a timing signal;

5 from said comparing, forming a pulse width modulated signal;

6 up-converting the pulse width modulated signal to a modulated carrier
7 signal;

8 transmitting said modulated carrier signal;

9 receiving said modulated carrier signal;

10 down-converting said modulated carrier signal to restore the pulse
11 width modulated signal; and

12 integrating the restored pulse width modulated signal to remove a
13 timing signal from said restored pulse width modulated signal to
14 extract said analog audio signal.

1 21. (Currently amended) The method of claim 20 further comprising the steps
2 of:

3 amplifying the restored ~~analog~~audio signal

4 transferring the amplified ~~analog~~audio signal to a transducer.

1 22. (Currently amended) The method of claim 20 wherein the comparing the
2 ~~analog~~audio signal to the timing signal and forming the pulse width
3 modulated signal comprises the step of:

4 forming the timing signal to have a triangular waveform;

5 comparing the amplitude of the ~~analog~~audio signal to the amplitude of
6 the triangular waveform;

7 if the amplitude of the ~~analog~~audio signal is greater than the amplitude
8 of the timing signal, setting the pulse width modulated signal to
9 a first logic level; and

10 if the amplitude of the ~~analog~~audio signal is less than the amplitude of
11 the timing signal, setting the pulse width modulated signal to a
12 second logic level.

1 23. (Original) The method of claim 20 wherein the up converting the pulse
2 width modulating signal to the modulated carrier signal comprises the
3 steps of

4 combining a carrier frequency with the pulse width modulated signal to
5 form the modulated carrier signal.

1 24. The method of claim 23 wherein the combining of the carrier frequency
2 with the pulse width modulated signal is a modulating of the carrier
3 frequency by the pulse width modulated signals, said modulating being
4 selected from a group of modulating steps consisting of frequency shift
5 keying modulating, amplitude shift keying modulating, phase shift keying
6 modulating, quadrature phase shift keying modulating, time domain
7 multiple access modulating, and code domain multiple access modulating.

1 25. (Original) The method of claim 20 wherein the down-converting said
2 modulated carrier signal to restore the pulse width modulated signal
3 comprises the step of:

4 combining a local oscillator signal with the modulated carrier signal to
5 restore the pulse width modulated signal.

1 26. (Original) The method of claim 23 wherein combining of local oscillator
2 signal with the carrier frequency is a demodulating of the carrier frequency
3 to extract the pulse width modulated signals, said demodulating being
4 selected from a group of demodulating steps consisting of frequency shift
5 keying demodulating, amplitude shift keying demodulating, phase shift
6 keying demodulating, quadrature phase shift keying demodulating, time
7 domain multiple access demodulating, and code domain multiple access
8 demodulating.

- 1 27. (Original) The method of claim 20 wherein the carrier signal is at least 900
2 MHz.